

SLC25A3 siRNA (m): sc-153510

BACKGROUND

Inner membrane mitochondrial proteins are responsible for the transport of metabolites across the mitochondrial membrane. SLC25A3 (solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 3), also known as PHC or PTP (phosphate transport protein), is a 362 amino acid multi-pass inner mitochondrial membrane protein that belongs to the mitochondrial carrier family. SLC25A3 transports phosphate groups (and cotransports H⁺) to the mitochondrial matrix from cytosol, and exists as two alternatively spliced isoforms designated SLC25A3 isoform A and B. Highly expressed in pancreas, skeletal muscle and heart, SLC25A3 contains three solcar repeats and is encoded by a gene that maps to human chromosome 12q23.1. Defects in the gene encoding SLC25A3 are linked to mitochondrial phosphate carrier deficiency (MPCD), a disorder of oxidative phosphorylation that leads to death within the first year of life.

REFERENCES

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2. Dolce, V., et al. 1994. The sequences of human and bovine genes of the phosphate carrier from mitochondria contain evidence of alternatively spliced forms. *J. Biol. Chem.* 269: 10451-10460.
3. Marsh, S., et al. 1995. Chromosomal localization of the mitochondrial phosphate carrier gene PHC to 12q23. *Genomics* 29: 814-815.
4. Huizing, M., et al. 1998. Human mitochondrial transmembrane metabolite carriers: tissue distribution and its implication for mitochondrial disorders. *J. Bioenerg. Biomembr.* 30: 277-284.
5. Mayr, J.A., et al. 2007. Mitochondrial phosphate-carrier deficiency: a novel disorder of oxidative phosphorylation. *Am. J. Hum. Genet.* 80: 478-484.
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CHROMOSOMAL LOCATION

Genetic locus: SLC25a3 (mouse) mapping to 10 C2.

PRODUCT

SLC25A3 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SLC25A3 shRNA Plasmid (m): sc-153510-SH and SLC25A3 shRNA (m) Lentiviral Particles: sc-153510-V as alternate gene silencing products.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SLC25A3 siRNA (m) is recommended for the inhibition of SLC25A3 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

SLC25A3 (F-1): sc-376742 is recommended as a control antibody for monitoring of SLC25A3 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SLC25A3 gene expression knockdown using RT-PCR Primer: SLC25A3 (m)-PR: sc-153510-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.